



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/919,798 | 08/02/2001 | Hong Bae Park | 041501-5440 | 4306 |

9629 7590 02/27/2003

MORGAN LEWIS & BOCKIUS LLP
1111 PENNSYLVANIA AVENUE NW
WASHINGTON, DC 20004

EXAMINER

HODGES, MATTHEW P

ART UNIT PAPER NUMBER

2879

DATE MAILED: 02/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/919,798

Applicant(s)

PARK, HONG BAE

Examiner

Matt P Hodges

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 14-24 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-13 is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election of Group I in Paper No. 5 is acknowledged. Because applicant did not distinctly and specifically point out any supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 14-24 are withdrawn from further consideration.

Specification

The disclosure is objected to because of the following informalities:

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Appropriate correction is required.

Page 16 line 13 and Page 21 line 20 use the term "phosphor gas" with respect to the fill gas of the display device. Applicant for instance suggests using Xe gas in the product. Examiner believes that the intended word for the description of this gas would be "Fill" or "Discharge". No change is required however if "phosphor" was the intended description.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2879

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vollkommer et al. (US 6,034,470) in view of Kuznetzoff (US 4,270,823).

Regarding claims 1-4, Vollkommer discloses (see figure 6b) a display device including a first substrate (7), an anode (25a) being formed on the substrate, a first dielectric material (28) covering the anodes and substrate, a reflective layer (30), a first phosphor layer (31), a discharge space, a second phosphor layer (32), a second dielectric layer (29), and a cathode (24) covered by the dielectric and formed on the second substrate (8). (Column 12 line 43 – Column 13 line 12). Further the two substrates are connected in a gas tight fashion to the frame by glass solder. (Column 10 lines 54-59). Vollkommer does not appear to specify the use of grooves formed on the substrates to accept the electrodes formed on the substrates, however, Kuznetzoff (see figure 1), in the field of planar panels, discloses the use of grooves formed in the top and bottom substrates facing each other and the nesting of the electrodes formed on the substrate into the grooves. (Column 1 lines 46-60). The use of slots is known in the art to advantageously allow for high precision discharge electrodes and can increase adhesion between the substrate and electrode. (See Miyazaki 'US 5,800,232' Column 3 lines 21-34). Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the use of grooves formed on the substrates to accept the electrodes formed on the substrates as disclosed by Kuznetzoff into the display device taught by Vollkommer in order to advantageously allow for high precision discharge electrodes and increase adhesion between the substrate and electrode.

Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vollkommer et al. (US 6,034,470) in view of Miyazaki (US 5,800,232).

Art Unit: 2879

Regarding claims 1-4, Vollkommer discloses (see figure 6b) a display device including a first substrate (7), an anode (25a) being formed on the substrate, a first dielectric material (28) covering the anodes and substrate, a reflective layer (30), a first phosphor layer (31), a discharge space, a second phosphor layer (32), a second dielectric layer (29), and a cathode (24) covered by the dielectric and formed on the second substrate (8). (Column 12 line 43 – Column 13 line 12). Further the two substrates are connected in a gas tight fashion to the frame by glass solder. (Column 10 lines 54-59). Vollkommer does not appear to specify the use of grooves formed on the first substrate where both electrodes are placed on the substrate, however, Miyazaki (see figure 1), in the field of planar panels, discloses the use of grooves formed on the bottom substrate nesting both the electrodes. (Column 4 lines 14-32). Placing both electrodes on the bottom substrate serves to simplify manufacture by requiring grooves only be formed on one substrate and the forming of electrodes can be done simultaneously on the same surface. Further the second dielectric layer can be removed thus lowering cost. Finally, the use of slots is known in the art to advantageously allow for high precision discharge electrodes and can increase adhesion between the substrate and electrode. (Column 3 lines 21-34). Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the use of grooves formed on the first substrate where both electrodes are placed on the substrate as disclosed by Miyazaki into the display device taught by Vollkommer in order to advantageously allow for high precision discharge electrodes, increase adhesion between the substrate and electrode, and lower manufacturing cost.

Allowable Subject Matter

Claims 8-13 are allowed.

Art Unit: 2879

Regarding claim 8, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 8, and specifically comprising the limitation of a flat lamp where the electrodes are formed in grooves on the two substrates facing each other and the electrodes are formed with a width that is smaller than the width of the groove. The closest available prior art is Choi et al. (US 6,005,345) which appears to show electrodes that are smaller than the grooves, however in this case the grooves represent the entire base of the discharge cell which would negate one of the primary advantages listed in the rejection of claims 1 and 5 above of being able to advantageously limit the electrode size. Further not additional motivation to include the space is given in Choi or is readily evident to the examiner from the prior art.

Regarding claims 9 and 10, claims 9 and 10 are allowable for the reasons given in claim 8 because of their dependency status from claim 8.

Regarding claim 11, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 11, and specifically comprising the limitation of a flat lamp where the electrodes are formed in grooves on the bottom substrate and the electrodes are formed with a width that is smaller than the width of the groove. The closest available prior art is Choi et al. (US 6,005,345) which appears to show electrodes that are smaller than the grooves, however in this case the grooves represent the entire base of the discharge cell which would negate one of the primary advantages listed in the rejection of claims 1 and 5 above of being able to advantageously limit the electrode size. Further not additional motivation to include the space is given in Choi or is readily evident to the examiner from the prior art.

Regarding claims 12 and 13, claims 12 and 13 are allowable for the reasons given in claim 11 because of their dependency status from claim 11.

Art Unit: 2879

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Choi et al. (US 6,005,345) discloses the use of etched bottom substrates.

Andreidakis (US 4,518,894) discloses the use of two crossing grooves in the bottom substrate.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matt P Hodges whose telephone number is (703) 305-4015. The examiner can normally be reached on 7:30 AM to 4:00 PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (703) 305-4794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

mph 
February 20, 2003


MICHAEL H. DAY
PRIMARY EXAMINER